

The Adoption of Clinical Information Systems by Physicians and Nurses: A Case Study Report

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INTRODUCTION

The growing interest concerning the implementation of clinical information systems (CIS) is visible everywhere in industrial countries. Every year, millions of dollars are invested in information technology in the health care industry. When considering the present economical context, such an investment should allow the production of better services at a lower cost. In order to gain advantages from those investments, information systems practitioners and academicians claim that the adoption of CIS by physicians and nurses is a *sine qua non* condition to success.

This is why it is important to identify the factors and mechanisms that will favour, or inversely hinder, the adoption of CIS in health care institutions. The present study aims at a better understanding of the adoption of CIS in an hospital setting. More precisely, the main research objectives are to identify and compare the key success factors and strategies and the resistance factors and strategies in the adoption of CIS by physicians and nurses.

METHODS

We conducted an in-depth single-case study whose objective was to describe and analyze the implementation of an integrated CIS in a general hospital in Quebec. More than twenty respondents were interviewed, including Administrators, Information System Department Professionals, Physicians and Nurses. Respondents were key informants and provided critical information. To collect the data, we mainly used two techniques. Firstly, we conducted "face-to-face" interviews with the professionals. These interviews lasted approximately one hour each. The questions were open-ended; this type of interview enable to gather facts as well as opinions. Secondly, we went through the documentary information available (such as minutes of the committees, reports, etc.) to corroborate and augment evidence from other sources.

RESULTS

The case study was conducted in a general hospital of 250 beds whose annual budget amounts to about 30 million dollars. Inaugurated in 1988, it was supposed to be Quebec first paperless hospital. The CIS adopted was integrated; its implementation began in 1991. Rapidly, problems arose. Everybody judged that response times were too slow. Physicians considered that the system was not user-friendly enough, etc. Still, the administration decided to go on with the initial implementation schedule. A year later, all nurses were trained. They were using the system, without any major problem, while the physicians continued to complain. Eventually, the physicians refused to use the system and even imposed an ultimatum: whether the system was out or they were out. From difficult negotiations, the decision was made to stop the implementation process and to withdraw some of the functions. Four years and 12 million dollars later, the system is only used at about 25% of its capacity and might be abandoned within the next few months.

The implementation process and the issue of this system is considered very differently depending on the stakeholders' identity. From the nurses' point of view, the system was good and the implementation process was a success. For the information system professionals, the system was good, but they are reluctant as of the way it was implemented. Clearly, in the eyes of most physicians, the system had serious flaws. Consequently, the failure of the implementation demonstrates physicians' power and their capacity to act in their own interests.

One of the main conclusions to be drawn from this study reminds us to never ignore the fact that different stakeholders may have divergent interests in the implementation process of a CIS. If so, it is important to remind that powerful stakeholders may have enough influence to hinder the project if it does not contribute to the achievement of their goals.